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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.
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08/847,935 04/28/97 KELLER

R 002240.P045

EXAMINER

PM21/1228

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LOUIS JACQUES, J	
ART UNIT	PAPER NUMBER

3661


DATE MAILED:

12/28/98

Please find below and/or attached an Office communication concerning this application or proceeding.

Commissioner of Patents and Trademarks

Office Action Summary

Application No. 08/847,935	Applicant(s) Keller et al	
Examiner Jacques H. Louis-Jacques	Group Art Unit 3661	

☒ Responsive to communication(s) filed on Nov 10, 1998

☒ This action is **FINAL**.

☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11; 453 O.G. 213.

A shortened statutory period for response to this action is set to expire 3 month(s), or thirty days, whichever is longer, from the mailing date of this communication. Failure to respond within the period for response will cause the application to become abandoned. (35 U.S.C. § 133). Extensions of time may be obtained under the provisions of 37 CFR 1.136(a).

Disposition of Claims

☒ Claim(s) 1-14 is/are pending in the application.

Of the above, claim(s) _____ is/are withdrawn from consideration.

☐ Claim(s) _____ is/are allowed.

☒ Claim(s) 1 and 4-14 is/are rejected.

☒ Claim(s) 2 and 3 is/are objected to.

☐ Claims _____ are subject to restriction or election requirement.

Application Papers

☐ See the attached Notice of Draftsperson's Patent Drawing Review, PTO-948.

☐ The drawing(s) filed on _____ is/are objected to by the Examiner.

☐ The proposed drawing correction, filed on _____ is ☐ approved ☐ disapproved.

☐ The specification is objected to by the Examiner.

☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. § 119

☐ Acknowledgement is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d).

☐ All ☐ Some* ☐ None of the CERTIFIED copies of the priority documents have been
☐ received.

☐ received in Application No. (Series Code/Serial Number) _____.

☐ received in this national stage application from the International Bureau (PCT Rule 17.2(a)).

*Certified copies not received: _____

☐ Acknowledgement is made of a claim for domestic priority under 35 U.S.C. § 119(e).

Attachment(s)

☒ Notice of References Cited, PTO-892

☐ Information Disclosure Statement(s), PTO-1449, Paper No(s). _____

☐ Interview Summary, PTO-413

☐ Notice of Draftsperson's Patent Drawing Review, PTO-948

☐ Notice of Informal Patent Application, PTO-152

--- SEE OFFICE ACTION ON THE FOLLOWING PAGES ---

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1. This office action is responsive to communication filed on November 10, 1998.

Claim Rejections - 35 USC § 103

2. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

3. Claims 1, 4-14 are rejected under 35 U.S.C. 103(a) as being unpatentable over Dano [4,398,195] in view of Teach [5,334,987].

Dano '195 discloses a method of an apparatus for guiding agricultural aircraft including a microprocessor for controlling a radar trilateralization system used on board of the aircraft for providing pattern flying (form line). Based on of a plurality of (two or more) transponders set up at known locations (terrestrial locations) a baseline (form line) is established. In column 1, Dano recognizes the disruptive transmission factors caused by extraneous objects to reflect radar signals and give false readings to the aircraft. In column 2, Dano explains the spray over a swath (which is about 44 feet wide). In column 4, Dano details the correction or update of the pattern (form line). See lines 24-40. In the claim section, more specifically, Dano discloses that there are provided means for forming a line or baseline between two or more points and means onboard of the vehicle for rejecting detected distances which are inconsistent with previously detected distances. Dano, however, does not specifically teach the form line using one or more terrestrial

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locations and a second form line using data derived from G.P.S. data and swathing offset. Teach, on the other hand, discloses an agricultural aircraft control system using [the] global positioning system for applying chemicals to an agricultural field in one of a plurality of flight patterns. The global positioning system receiver receives radio frequency signals from satellite and the position of the aircraft is determined from the information contained in the received signals. A computer onboard of the aircraft stores the surface coordinates. The aircraft pilot enters the desired orientation, swath width and track width of the flight pattern into the computer. See columns 2 and 3. Both Dano (figure 15, item 440) and Teach (figure 1, item 112 and figure 4) disclose a display device. Also, both Dano and Teach discloses the control of the aircraft, thus the steering thereof. Thus, it would have been obvious to one skilled in the art at the time of the invention to be motivated to modify the method of and apparatus for guiding the agricultural aircraft of Dano by incorporating the features from the agricultural aircraft control system using global positioning system of Teach because such modification will provide a more accurate path control, thereby ensuring uniform coverage through the field.

Allowable Subject Matter

4. Claims 2-3 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

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The prior art fails to teach the combination of following the second form line defined by the positioning data and swathing offset, deviating from the second form line to accommodate one or more terrain features, collecting new G.P.S. data during the following and deviating steps for computing one or more positions therefrom and defining an updated second form line using the computed positions.

Response to Amendment & Arguments

5. The amendment along with the arguments filed therewith on November 10, 1998 have been entered and carefully considered by the examiner.

Applicant argued that the prior art reference does not teach updating a form line according to one or more deviations from the form line.

It is the examiner's position that the prior art, namely the Teach reference, teaches such feature.

Teach discloses an aircraft control system for applying chemical to an agricultural field in one or a plurality flight patterns. A computer produces the flight pattern and generates signals representative if deviations from the desired flight pattern. The Teach patent also describes the use of G.P.S. or global positioning system (or satellites) for determining the position of the aircraft. In columns 3 and 4, Teach discloses deviations of the aircraft, thus deviations of the flight patterns, and provides orientation of the desired path. According to a method of Teach, signals

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from the satellites are received, deviations from the flight pattern are obtained and the flight pattern deviations are corrected based on the satellites signals. See also bottom of column 6.

For the above reasons, the combination of Dano and Teach still applies and the rejection is sustained. Accordingly, this office action is made final.

Conclusion

6. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

a.	4,847,773	van Helsdingen et al	Jul. 1989
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7. **THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

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8. Any inquiry concerning this communication or earlier communications from the examiner should be directed to **Jacques H. Louis-Jacques** whose telephone number is **(703) 305-9757**.

Any inquiry of a general nature or relating to the status of this application should be directed to the **Group Receptionist** whose telephone number is **(703) 308-1113**.

Any response to this action should be mailed to:

**Commissioner of Patents and Trademarks
Washington, D.C. 20231**

or faxed to:

(703) 305-7687, (for formal communications intended for entry, please indicate as so; and for informal or draft communications, please label "PROPOSED" or "DRAFT")

/jlj
December 16, 1998

JACQUES H. LOUIS-JACQUES
PRIMARY EXAMINER
Jacques Louis-Jacques
JACQUES H. LOUIS-JACQUES
PRIMARY EXAMINER